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JUL 21 1993

Before the Federal Communications Commission
Washington, DC 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the matter of

Amendment of the Commission's
Rules to Establish New Personal
Communications Services

GEN Docket 90-314
ET Docket 92-100

FCC - MAIL ROOM

92-100

To: The Commission

Comments of Xircom Corporation

Xircom is the market leader in local area network (LAN) adapters for portable computers. We have been following the proceedings of Dockets 90-314 and 92-100 with great interest. An unlicensed PCS frequency allocation could allow us to manufacture and sell wireless LAN products with improved performance characteristics.

Xircom's comments on recent late filings under Docket 90-314 follow:

Comments on the filing of the Unlicensed PCS Ad-hoc committee for 2 GHz microwave transition and management (UTAM)

UTAM has proposed progressive introduction of unlicensed PCS systems as spectrum is cleared. To avoid interference with existing users of the 1910 - 1930 MHz spectrum, portable devices would only become active under control of a base station with a known, registered geographical location.

The UTAM approach may be satisfactory for certain classes of unlicensed PCS, such as wireless PBX systems, which generally have fixed base stations. It is clearly unsuitable for applications such as wireless local area networks, which may consist entirely of portable computers. UTAM suggests drawing a distinction between 'nomadic' and 'non-nomadic' devices, suggesting that fully nomadic applications would be allowed only after the band is completely cleared.

Band clearing could take a considerable time -- perhaps several years -- by which time the band might be fully used by non-nomadic systems. Another concern is that once a partial (i.e. non-nomadic) solution exists, the UTAM 'entity' might have reduced incentive to completely clear the band.

Xircom recognizes that a substantial market exists for non-nomadic devices, and agrees that the UTAM proposal could lead to early deployment of such products. However, proceeding with the UTAM proposal would eliminate many of the applications for which unlicensed PCS was originally intended.

Comments on the WINForum etiquette

Xircom has been a supporter of WINForum, and was a participant in development of the etiquette. However, we have several reservations and qualifications regarding the etiquette in its present form:

WINForum draws attention to the difficulty of drawing up an effective etiquette for asynchronous and isochronous applications. (Examples of these are wireless PBX and wireless LAN systems, respectively.) The solution proposed would effectively restrict asynchronous operation to 10 MHz, which is insufficient bandwidth for an effective wireless LAN product.

The etiquette is based on energy sensing listen-before-transmit carrier-sense-multiple-access (LBT-CSMA). This is a notoriously unreliable technique, subject to component tolerances and interference, and the etiquette as described does not take account of these problems.

For example, the proposed signal threshold for asynchronous devices is quite low -- perhaps only 15 dB above the minimum detectable signal. Any noise or interference above this level would inhibit transmission, even though, in many cases, successful communication would be possible. The result would be severely limited throughput for a wireless LAN operating under the proposed rules.

The etiquette includes a provision for inter-operable transmitters to ignore all the access rules under an ill-defined requirement that 'other systems are not excluded from fair access'. This appears to allow users of the band to ignore most of the etiquette's provisions, which is contradictory, to say the least.

WINForum has not explained how compliance testing would be carried out or how questions of interpretation would be answered. In view of the complexity of the etiquette, it would be unreasonable to expect Commission staff to take on these tasks.

Overall, the etiquette as filed is a first attempt to solve a very difficult problem. There are many areas where further technical analysis is required, and Xircom does not believe that the etiquette as it stands is ready for inclusion in any new Part 15 rules.

Summary and Conclusion

The combined effect of the UTAM and WINForum proposals, if implemented, would make 1910 - 1930 MHz unattractive for Xircom's wireless LAN products. As an alternative, we would suggest an unlicensed allocation at 5.2 GHz, dedicated to high speed data communication. This would allow a streamlined etiquette, and avoid most of the problems described above.

Respectfully submitted

A handwritten signature in black ink, appearing to read "P. K. Cripps". The signature is written in a cursive, flowing style.

Peter K. Cripps
VP, Advanced Development
Xircom Corporation